Tips for Starting an Energy Management Program

Fundamentals of Energy Efficiency:
An Introductory Workshop
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Developing an Energy Management Strategy

- Use of formal energy management programs becoming more popular
- Number of resources available –
  - DOE *Corporate Energy Management (CEM)* program –
    - Modeled on quality management systems
    - Moves accountability for energy outcomes to upper levels of the firm; involves many areas of business activity (not just production)
    - Measure current performance, set goals, track savings, and reward improvements
    - *http://www1.eere.energy.gov/industry/bestpractices/corporate_energy.html*

Developing an Energy Management Strategy

- Resources (cont.) –
  - EPA/DOE ENERGY STAR® program –
    - Guidelines for Energy Management - measure current performance, set goals, track savings, and reward improvements; benchmarking
    - Assessment tools – for both corporate and facility levels
    - Other tools available – energy mgt. guidance, improving system performance (lighting, fans, etc.), financial evaluation, computer power mgt.
    - Training – webinars, pre-recorded training, self-guided presentations
    - Partnerships with industry
    - *http://www.energystar.gov/index.cfm?c=guidelines.guidelines_index*

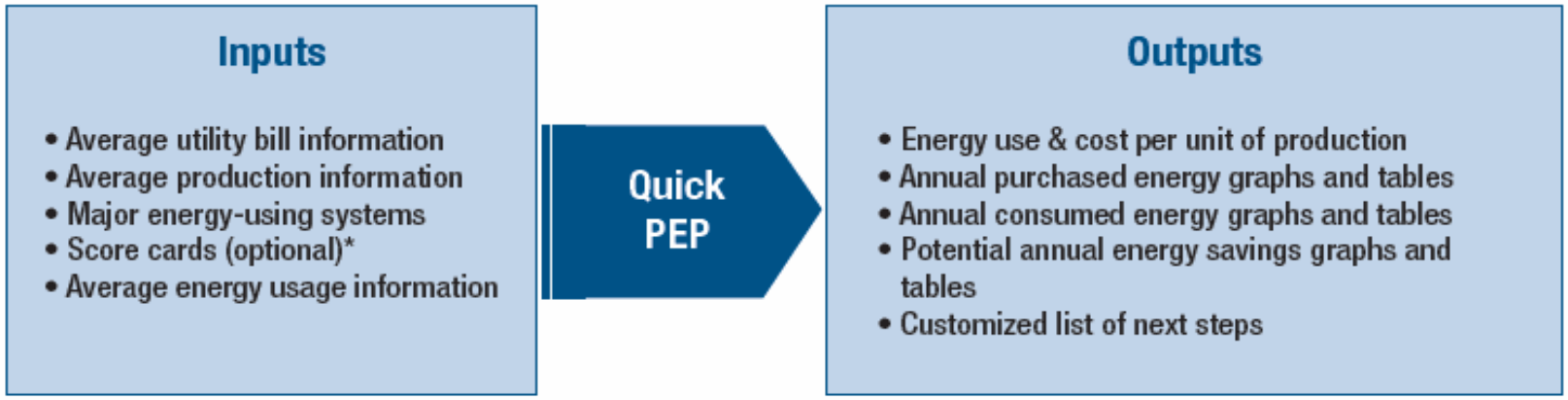
DOER 7-Step Energy Action Plan

1. Assign Responsibility
2. Assemble Data
3. First Cut Analysis
4. More Complex Analysis
5. Short and Long Term Plans
6. Examine Procurement
7. Monitor, Monitor, Monitor

Identifying and Evaluating Energy Efficiency Opportunities

- DOE Industrial Technology Program (ITP) tools –
  - *Quick Plant Energy Profiler (QuickPEP)* - run online at DOE's website; meant to be a broad overview of the energy profile for a plant. *http://www1.eere.energy.gov/industry/bestpractices/software.html*

DOE QuickPEP Tool



*Before presenting your results, Quick PEP requests information about the energy efficiency of your major plant systems. You can determine this yourself or fill out an optional "score card" to obtain efficiency information for selected systems.

Identifying and Evaluating Energy Efficiency Opportunities

- DOE Industrial Technology Program (ITP) tools (cont'd) –
  - *Energy Use and Loss Footprints* - developed for a number of manufacturing industries; map the flow of energy supply, demand, and losses in manufacturing facilities.
  - *Software tools* - evaluate energy saving opportunities in variety of systems, e.g., steam, motors, pumps, compressed air, fans, process heating, CHP
    - Massachusetts Energy Efficiency Partnership (MAEEP) conducts trainings on these tools

Identifying and Evaluating Energy Efficiency Opportunities

- Energy Audits (gas and electric) –
  - Comprehensive assessment for determining the best energy measures –
    - Detailed evaluation of energy use, including load profile
  - Providers –
    - *DOE Save Energy Now program* – 3 day assessment involving training on DOE software tools; 0.3 trillion Btu/yr *total* energy use; typically no cost; apply online *http://www1.eere.energy.gov/industry/saveenergynow/assessments.html*
    - *Industrial Assessment Center (IAC) audits* – 1 day, no cost, energy costs $100,000 to $1.75 million/year, SIC 20 – 39 (Dr. Beka Kosanovic (413) 545-0684 *http://www.ceere.org/iac/index.html*)
    - Consultants

Identifying and Evaluating Energy Efficiency Opportunities

- Energy Audits (cont'd) –
  - Often subsidized by utilities through their energy efficiency programs –
    - Contact your utility account representatives for detailed information on your provider's programs
    - All investor owned utilities (IOUs) have programs (e.g., NSTAR, NGRID, WMECO, Keyspan, Bay State Gas)
    - Municipal utility programs vary – links to many at MA Division of Energy Resources (DOER) website
    - Utilities can also assist with load management

Other Resources

- MA DOER –
  - information on energy resources, including energy procurement, fuel prices, conservation, and renewables
  - *http://www.mass.gov/doer/*
- Combined heat and power (CHP) -
  - Northeast CHP Application Center (@ CEERE) –
    - provides assessments and detailed information on CHP
    - *http://www.northeastchp.org/nac/index.cfm*
  - EPA CHP Partnership –
    - Info on technologies, emissions, $$, decision tool
    - *http://www.epa.gov/chp/*

Other Resources

- Energy Service Companies (ESCOs) –
  - develops, installs, and finances projects designed to improve the energy efficiency and maintenance costs for facilities over a seven to 10 year time period.
  - assume the technical and performance risk associated with the project
  - National Association of Energy Service Companies (NAESCO) *http://www.naesco.org/about/esco.htm*

Useful Publications

- Rutgers Self-Assessment Workbook for Small Manufacturers
  http://iac.rutgers.edu/database/technicaldocs/IAC_Manualsselfassessment.pdf
- Wulfinghoff, Donald R., Energy Efficiency Manual, Energy Institute Press, 1999
- Mull, Thomas E., Practical Guide to Energy Management for Facilities Engineers and Plant Managers, ASME Press, 2001

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